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ABSTRACT

The functions of the National Technical Information Service (NTIS) and its predecessor agencies in serving as a central source for dissemination of federally funded scientific and technical research reports are examined in this paper. The primary emphasis is on identifying questions which need to be asked before any solutions to perceived problems can be found. Changes in the clearinghouse's emphasis and scope are contrasted with consistency of adherence to the original directives, and discrepancies between stated objectives and actual areas of concentration are noted. Administrative policies and constraints are considered in relation to their impact on NTIS and NTIS users, and the relationship between NTIS and the Government Printing Office (GPO) is also discussed. Appendices include more detailed information on collection growth and sales figures, thesauri, NTIS accession numbers, indexes and current awareness services, foreign order prices, product formats and delivery time, and NTIS/GPO collection overlap. A list of libraries with NTIS document collections and a bibliography are included. (Author)

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NTIS: CONCEPT OF THE CLEARINGHOUSE 1945-1979

by

Mary Glen Chitty

A master's paper submitted to the faculty of the School of Library Science of the University of North Carolina at Chapel Hill in partial fulfillment of the requirements for the degree of Master of Science in Library Science

Chapel Hill
March, 1979

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The functions of the National Technical Information Service and its predecessor agencies, in serving as a central source for dissemination of the results of federally funded scientific and technical research reports, are examined. Changes in emphasis and scope are contrasted with consistency of adherence to the original directives.

Discrepancies between stated objectives and actual areas of concentration are noted. Administrative policies and constraints are considered in relation to their impact on NTIS and NTIS users. The relationship between NTIS and the Government Printing Office is discussed.

The primary emphasis is on identifying questions which need to be asked before any solutions to perceived problems can be found. Appendixes include more detailed information on collection growth and sales figures, thesauri, NTIS accession numbers, indexes and current awareness services, foreign order prices, product formats and delivery time, NTIS/GPO collection overlap and a list of libraries with NTIS document collections.

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Mankind is in no mood to do without the fruits of large-scale organization....On the contrary, we can confidently expect a further increase in the "institutionalization" of society, simply because the tasks ahead of us are tasks which only large-scale organization can tackle. The job of this generation is not to abolish large-scale organization. It is to make it perform--for individual, community and society alike....We have to learn to manage and to control large-scale organizations. To be able to do this, we first have to understand them.

Peter F. Drucker

Concept of the Corporation, from the preface to the 1972 edition

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In 1953 a "storehouse of research data, located in the Commerce Department's Office of Technical Services" was described as "valuable but little-known".[1] In 1979 the National Technical Information Service was referred to as a "little-known agency of the Department of Commerc[2]

The Office of Technical Services was but one of the predecessor agencies of NTIS. Although the scope of these information agencies has changed and broadened considerably in the years since World War II, knowledge of and about the agency remains limited, and is seldom up-to-date or complete. A bewildering variety of name changes, policy changes, and apparent shifts in emphasis only add to the confusion. Many librarians have never heard of or dealt with NTIS. Library textbooks and courses seldom give it more than a passing mention. Government document collections may barely acknowledge its existence. But NTIS is a major source of government documents and its services are used by many libraries.

The origins of NTIS go back to the end of World War II, when the Publication Board was created in 1945. This was succeeded by the Office of Technical Services (OTS) in 1946, which was followed by the Clearinghouse for Federal Scientific and Technical Information (CFSTI) in 1964. CFSTI was incorporated into the newly formed National Technical Information Service (NTIS) in 1970.

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These name changes do not precisely delineate the changes in functions and emphases of the Publication Board/ OTS/CFSTI/NTIS development. As in so many government agencies, some purposes have remained constant, some have been added or deleted by transfers of responsibility to or from other agencies, or by obsolescence, and some have developed more by default than by design.

NTIS and its predecessor agencies have often been criticized for failure to focus on well-defined objectives and for lacking well-defined limits altogether. They have also been criticized for concentrating on some goals to the detriment of others.

Such criticisms have validity. NTIS does appear to scatter its energies very widely. Its interpretations of its responsibilities and scope seem to have varied widely. The emphasis on business and industry and on being self-sustaining remain incomprehensible to some users, including many librarians.

But appearances can be deceiving. The bulk of NTIS activities are concentrated in a few major areas, although this is often obscured by the emphasis on the many peripheral services. The responsibilities and scope have expanded greatly, but usually in responses to larger changes in the government and society of which it is a part. And while some emphases seem shortsighted or counter-productive, NTIS has been remarkably consistent in applying its original directives.

Any study, which attempts to be as comprehensive as this one tries to be, is open to charges of superficiality and oversimplification. I am conscious of the limitations which time and energy have placed on my collection of information. Although the volume of literature available on NTIS has expanded considerably in recent years, much of it can be found only in obscure or ephemeral sources. There are sizeable gaps. Much of the published information is NTIS promotional material, and speeches and press releases by NTIS officials. I have drawn on my experiences and observations over the past two years as a reference librarian and supervisor of the Environmental Protection Agency's Air Pollution Technical Information Center in Research Triangle Park, North Carolina. Conversations with NTIS users, officials, 'source clients' and librarians concerned with acquiring documents from and submitting reports and referring inquiries to NTIS have all been helpful.

New plans and developments seem likely to be forthcoming from the new director of NTIS. Some of my questions and concerns may already be obsolete.

But this has been a useful exercise. My own comprehension of what NTIS is and tries to be has increased. I hope that the following conveys some of that insight.

Note: For brevity I sometimes refer to NTIS when referring to the succession of Publication Board/OTS/CFSTI/NTIS. I also refer to NTIS as the separate entity existing from 1970 to the present. The distinction should be clear in context.

I. History and scope: or organization for production

The origins of NTIS lie in Executive Order 9568 (June 8, 1945) which established the Publication Board and authorized the public release of scientific information developed by or for the U.S. government. A large quantity of military research undertaken during World War II was seen to have commercial applicability afterwards. Examples of the valuable information available included

> an improved last system for shoes, tests determining the best methods of water proofing textile fabrics or making them fire-resistant, and research done for the Air Force on psychophysiological reactions of human beings under various kinds of stress[3]

An amendment to this order authorized the release of captured German technical information which was also seen as having commercial potential (Executive Order 9604, August 28, 1945). The 'sunshine ingredient' in 'a well-known household detergent' was derived from the seized enemy data.[4] The Office of Technical Services (OTS) was created in 1946 and formally transferred to the Department of Commerce by Executive Order 9809 (December 17, 1947).

Later Public Law 776 (U.S.Code, Title 15, Sections 1151-1157, approved September 9, 1950) directed the Secretary of Commerce to establish and maintain a clearinghouse for the collection and dissemination of scientific, technical, and engineering information

> to make such information available to industry and business, to state and local government, to other agencies of the federal government and to the general public, through the preparation of abstracts, digests, translations, bibliographies, indexes and microfilm and other reproductions, for distribution either

directly or by utilization of business, trade, technical and scientific publications.

The Publication Board had originally expected to process three or four thousand reports in all. By early 1946 five thousand declassified documents were arriving to be processed per month. The original objectives of the Publication Board were

> First, declassified material should be so organized as to permit research workers immediately or in the distant future, to find information quickly and easily. Nothing should be lost or buried in inaccessible files.
> Second, every bit of information received should be made available to the public.
> Third...information should be made available as quickly as possible.
> Fourth, ways should be found to tell business what information was available.[5]

As it was originally organized in 1946, OTS had five divisions, only two of which were directly responsible for the dissemination of scientific and technical reports. The Bibliographic and Reference Division (also named at various times the Library Division or Library and Reports Division) continued the work of the Publication Board (and continued to use the title at times as well). The Technical Industrial Intelligence Division was responsible for screening and processing the captured German reports.

The Industrial Research and Development Division was intended to promote scientific research, particularly by financing research done under government contract. This division was abolished in 1948. The Inventions and Engineering Division was organized as a liaison between the 'inventive public' and the armed forces. The Information Staff promoted

wider public knowledge of the work of OTS, particularly the more important scientific and technical reports acquired by the Bibliographic and Reference Division.[6]

Dissemination of reports continued to be an important function of OTS throughout the 1950's and early 1960's. Once the German, and later Japanese, documents had been processed the majority of acquisitions came from U.S. government agencies and their contractors.[7] Increased emphasis on science and technology after the appearance of the Russian Sputnik in 1957 gave OTS new importance as a clearinghouse for federal research, although this role had been designated in the original statutory authority.

OTS was redesignated the Clearinghouse for Federal Scientific and Technical Information (CFSTI) in 1964. The Committee on Scientific Information had concluded that a need existed for

> a single point of contact...to provide for science and industry and the technical community information about Government-supported scientific and technical work in the public domain...This Clearinghouse should make available all Government-generated technical report literature in the public domain. It should bring all of this material into one catalog system and develop an effective Government-wide index...It should be able to refer people to special sources of technical information and to information about research and development in progress. It should develop an effective means of conveying this information to various regions of the country, adapting it to the needs and interests of local scientific, industrial and technical groups.[8]

Most of these functions had been responsibilities of OTS, though not all had been fully implemented.

The most important change would appear to be implementation

of the suggestion of the President's Science Advisory Committee that OTS be made "a complete technical report sales agency...[with] enough support so that it can announce promptly and supply inexpensively a copy of any unclassified Government technical report".[9]

It is unclear exactly why and how the archival responsibility was added, but it seems related to the agreement with the Department of Defense (DOD) that CFSTI would handle distribution of unclassified DOD reports beginning July 1964. A DOD directive required such an archive. Much of the early OTS collection was transferred to the Library of Congress in 1960 and the captured German documents were sent to the Air and Space Museum of the Smithsonian Institution in 1966.[10] NTIS now has only an index to these collections.[11]

CFSTI became the National Technical Information Service (NTIS) in September 1970. The move was announced as an "intensification of effort already carried out in more limited areas by the Clearinghouse for Scientific and Technical...[which] has been merged into NTIS".[12] Part of the expansion was the addition of business and economic reports and data to the scientific and technical collection. The archival responsibility of NTIS was firmly, if over-optimistically stated. By January 1, 1971 NTIS was "to keep in stock and available microfiche of government documents--even after they have gone out of stock at the Government Printing Office".[13]

Statistics on the growth of the NTIS and predecessor

agencies' collections and sales appear in Appendix I.

One of the more criticized aspects of NTIS becomes more comprehensible in light of its early history and statutory authority. The emphasis on business and industry is obviously the result intended by the executive orders which established the Publication Board. This original purpose was strengthened when OTS was transferred to the Department of Commerce.

Business and industry now account for about 46% of NTIS orders, federal government agencies for 10%, and state and local government agencies for 11%. Approximately 18% of the orders are from foreign organizations. Universities order 13% and 'other', 2%.[14]

NTIS has publicized no figures on the percentage of library orders, presumably libraries are seen " not as the ultimate users of most NTIS products; they are intermediaries and agents for the user.[15] Is the emphasis on business and industry in any way a deterrent to effective utilization of NTIS by other clients, particularly government agencies?

A puzzling aspect of NTIS has been its insistence upon its role as a collector and disseminator of foreign technology, although this category of reports remains numerically insignificant (0.4% of documents acquired in fiscal year 1974.[16] Translations are another marginal category (3% in a 1973 sample).[17]

In spite of Public Law 776 with its directive to collect from "whatever sources, foreign and domestic", would this

continue to be an objective if the early efforts of OTS had not been concentrated so heavily on the captured German technical documents? Translations were originally undertaken to avoid duplicate translation of the German documents.[18]

II. Aims and objectives: or organization for use

That the primary role of NTIS has been the dissemination of documents has often been obscured by an emphasis on supplying 'information'. While the ultimate user is probably more interested in content than in the complexities of the bibliographic citation, it is the bibliographic aspects which NTIS has traditionally concentrated on.

While several divisions of OTS were concerned with expediting public access to information rather than documents, these were quickly eclipsed by the growing importance of the Bibliographic Division. CFSTI was originally envisioned as being responsible for the coordination of all federal scientific and technical information systems, in order to eliminate or reduce duplication of federal research. Savings to the government of about $500,000 from elimination of duplication were estimated for the first year.[19] CFSTI too found document processing to be its major activity.

The idea of a central research coordinating agency surfaced again in 1975. Title IV of H.R. 4461 proposed the establishment of a Science and Technology Information and Utilization Corporation which would bring together NTIS, the Smithsonian Science Information Exchange, and parts of the National Science Foundation.[20] This bill was abandoned, despite general agreement on the responsibility of the federal government for formulating information policies and coordinating federal information activity. An alternate bill was quickly introduced and a study committee established to submit a report in two years.[21]

NTIS should expect similar proposals to arise in the future. Would it be more effective as part of such an information agency, should one eventually be created? Is it losing sight of its primary objectives by trying to function in a limited way as such an agency now? Should it be concentrating more effort into becoming such an agency, since there is general agreement on the need for this coordination?

To focus on acquiring bibliographic control over government technical reports and other 'printed' forms of information, including such untraditional formats as computer tapes, is less ambitious than trying to coordinate all the scientific research activities of the federal government. But bibliographic control alone has proved to be a major challenge.

NTIS imposes bibliographic control in several ways. There are also areas in which it does not take responsibility.

NTIS is often criticized for lacking a clear-cut definition of 'scientific' and 'technical' and for acquiring documents in inappropriate subject areas. But NTIS does not collect by subject. NTIS collects primarily by government agency. Problems of duplication and inadequate subject coverage are often a direct result of this policy.

NTIS does try to maintain the comprehensiveness of individual agencies' coverage. It is also responsible for acquiring reports from those agencies whose document dissemination needs correspond to the services which NTIS offers and whose reports relate in some way to the scope

of the NTIS collection.

Completely comprehensive coverage of an agency's publications may be a laudable but is nearly an impossible objective. Even the Government Printing Office, which can require federal agencies to submit copies of publications except those " required for official use only or for strictly administrative or operational purposes which have no public interests or educational value"[22] cannot claim complete coverage. NTIS does not have this legislative authority.

Early OTS agreements with agencies on document acquisition concentrated on the military and the Atomic Energy Commission. In 1961 cocperative arrangements arrangements were made for OTS to announce the Armed Services Technical Information Agency's (ASTIA) publicly available reports.[23] Distribution of these reports was taken over by CFSTI as of July 1964.[24] NASA reports were being handled by 1963.[25] In 1967 Defense Documentation Center (successor to ASTIA), AEC and NASA reports accounted for 81% of NTIS acquisitions. (By 1977 the percentage had dropped to 62%.)[26]

NTIS now has agreements with several hundred agencies and may be the primary or secondary distribution point for an agency's publications. Distribution by NTIS does not preclude distribution by the originating agency. Draft reports may only be obtainable from an agency. Reports may be obtained from an agency in advance of NTIS announcement. Comprehensiveness of an agency's coverage depends on the extent to which an agency, or divisions within an agency,

are committed to the concept of assuring public access through NTIS. NTIS admits that "none of us...believes that our acquisitions are as comprehensive as they should be, and we are constantly seeking new sources".[27]

Some agencies submit little or no material to NTIS. The Departments of Agriculture and Health, Education and Welfare have chosen to disseminate much of their literature through the National Libraries of Agriculture and Medicine. Other agencies believed by NTIS to be withholding relevant reports are the Department of Housing and Urban Development, General Services Administration, and the Securities and Exchange Commission.[28]

NTIS does not truly control the subjects it covers, except by inclusion or exclusion of an agency. It also does not control the range of documents submitted by an agency. This is acknowledged in the latest NTIS general catalog. "There are titles in the NTIS collection that probably shouldn't be there, or which may bear prices which seem excessive...These may be brief promotional or explanatory booklets...Sometimes these publications are inadvertently included by the source agencies".[29]

If agencies are primarily responsible for determining which reports are submitted to NTIS, are they receiving appropriate feedback? NTIS has supplied sales information to its 'source clients' since April 1973. Monthly print-outs, in three formats, are available. These give cumulative and current demand for titles, customers' names and addresses and

other information.[30] Is this adequate for the agencies' purposes? Perhaps, even more important, is it reaching report authors and contract project officers who originate and ultimately control access to many documents?

Should NTIS try to set guidelines for the inclusion of suitable reports in its collection? Are there adequate arrangements for noting deficiencies or supersessions which could encourage source clients to submit reports which are being withheld for fear of circulating erroneous or outdated information? Are there reports which should remain available but need not be publicized? Some agencies use NTIS for both announcement of current reports and for archival purposes. Should these two functions be separated?

III. Indexes and automated access: or the "curse of bigness"

NTIS is responsible for the production of indexes to reports added to the collection. However their view of this function is, at least to librarians, slightly peculiar. Government Reports Announcements and Index (GRA & I) is described as an "all-inclusive bi-weekly journal containing technical summaries of all new publications" and as only one of "several current-awareness products".[31]

GRA & I seems unlike to be anyone's first choice of current awareness tools, since it is rather bulky and not easy to use. But this view does seem to account for what is otherwise an incomprehensible lack in an indexing and abstracting tool--a title index.

In recent years Weekly Government Abstracts (WGA) and Selected Research in Microfiche (SRIM) have added title indexes. But title access to the collection as indexed in GRA & I has been available only through on-line searching of the automated bibliographic data file.

A title KWOC (which includes accession number and author indexes) is slated to be introduced in 1979.[32] Imminent availability of this KWOC has been announced several times in the past.

Subject access to GRA & I has often been the subject of complaints by librarians and other users. Some of this dissatisfaction can be attributed to the NTIS orientation towards agencies rather than subjects. The problem is compounded by the use of multiple thesauri and free-language indexing. (See Appendix II for a list of thesauri used in

the NTIS bibliographic file.) If it is not possible to provide a single thesaurus, and this seems unlikely given the complexities of wide subject coverage, in rapidly changing disciplines, can or ought NTIS provide some sort of cross-references between thesauri?

Difficulties with subject access and indexing terms are not unique to the NTIS data base. The added capabilities of an automated system and the size of the collection tend to make problems particularly apparent. But NTIS has two characteristics which not all large automated systems share.

Automation came early to NTIS. In 1953 the Office of Technical Services was "attempting to keep itself informed of all developments in /mechanized/ storage and retrieval... so that when equipment of the type that may perform the services required by OTS is available, it can be considered for adoption".[33] By 1963 a study was underway which would "provide a detailed basis for progressive mechanization of OTS operations...Perhaps through mechanized means of handling tape prepared by the major contributing sources, a uniform /Index/ listing can be produced".[34]

Extensive automation seems to have been instituted in the manner suggested. DOD, AEC, and NASA began supplying "machinable input...Computer-converted to the COSATI standard format for exchange of bibliographic data on magnetic tape, the tapes are utilized to announce in USGRDR /predecessor publication of GRA & I/ unclassified reports of these agencies.[35]

The tapes were used to produce DOD's Technical Abstract Bulletin (TAB), NASA's Scientific and Technical Aerospace Bulletin (STAR), and AEC's Nuclear Science Abstracts. Therefore about three-quarters of the actual indexing of the automated collection has not been done by NTIS, but by the originating agencies.[36]

The multiplicity of accession numbers (see Appendix III) and lack of standardized corporate and personal author entries are results of this approach. Have there been other unintentional side effects, which are both avoidable and ineffective? Has NTIS truly coordinated automation of a technical reports collection or has it simply merged three systems and added in the cataloging and indexing of the remaining one-quarter of the collection?

NTIS indexing and current awareness tools have undergone nearly as many changes in titles and coverage as the agency itself. Throughout the focus has been on providing current access. Has this interfered with the need for retrospective searching implicit in an archive? Should indexing be placed in a category separate from current awareness?

IV. Administrative policies; or production for self-sufficiency

A number of administrative policies have been apparently considered to be of only internal interest by NTIS. Recent years have seen more publicizing of changes in pricing policies and ordering procedures and information on sales and the user community.

Such information was not unavailable before. But figures were seldom comparable, policies were seldom clarified by explanations, and changes often escaped the attention of even frequent users. Promotional material still tends to overwhelm the individual with a barrage of options and services. Routine technical details of scope, coverage, duplication among services,and ordering procedures are often lacking.

User, especially librarian, feedback has become more prominent in the last decade. NTIS has not been unresponsive. But much confusion still exists, both among customers and other potential users, and among individual 'source clients' (suppliers of agency documents). Often the difficulty is not in finding an answer but in knowing what question to ask.

Financial policies have had the most attention, because NTIS prices, as have most prices, been a constant source of complaint. Public Law 776 outlined the basic financing policy and this is frequently quoted to justify publication prices and charges for other services.

But only a portion of Section 1153 is normally quoted The financing policy is

> to the fullest extent feasible and consistent with the objectives of this chapter, that each of the services and functions provided herein shall be

> self-sustaining or self-liquidating and that the general public shall not bear the cost of publications and other services which are for the special use and benefit of private groups and individuals; but nothing herein shall be construed to require the levying of fees or charges for services performed or publications furnished to any agency or instrumentality of the Federal Government, or for publications which are distributed...primarily for the general benefit of the public. (Emphasis added.)

Originally only indexes and subject bibliographies produced income for OTS. Revenue from the sale of other publications went to the Treasury Department.[37] In 1958 OTS received authority to retain the income from the sale of documents.[38]

The formation of CFSTI appears to be linked to changes in the sale of documents. A user group noted

> One has the feeling that this hurried expansion was imposed upon it so that it could serve as a cashier to take care of the necessary payments for documents rather than for reasons connected with the intellectual organization of information.[39]

The most aggressive policy of financial self-sustainment came with the formation of NTIS. Under Director William Knox the publishing industry saw NTIS becoming "increasingly powerful, effective and professional and consequently a potential threat".[40]

At one time Knox proposed that NTIS be established as an independent agency which would be competitive with the private sector. This attempt did not succeed. It seems likely that his successor, Melvin, Day will take a somewhat different approach.[41]

Prices of reports have been set by various methods.

The earliest price structure seems to have been similar to the present one. Photostat copies of OTS documents originally were sold at $1 for every fifteen pages.[42]

There has been at least one significant departure from charges based on the number of pages. At the time it was implemented only 40% of the copies supplied were sold. The rest were free to federal agencies and contractors. Paper copies represented 90% of total sales and prices ranged from 25¢ to $20.

A 1966 study found that "reproduction costs were a relatively small part of the cost of filling a document request and that total cost was not very sensitive to the number of pages in the titles. This suggested a single price for all copies sold".[43] A standard price of $3 per title was determined to be the break-even point and was instituted in 1967. Results of this change were described as satisfactory.[44]

It is not clear why the standard price policy was dropped. Paper copies of documents announced after January 1, 1969 were $3 for 300 pages or less, $6 for 301-600 pages, and $9 for 601-900 pages. Two years after announcement, a $3 service charge was added to the price. A service charge of $3 was also added to all documents announced prior to January 1, 1969.[45]

While this was a return to the system of charging by number of pages, page ranges were broad and three prices covered the majority of reports. This relatively simple

policy was later modified for older and 'wide-interest' reports. Older reports were sold at 5¢ per page, with a $3 minimum, and the wide-interest reports were "specially packaged and promoted and [were] priced somewhat higher to cover the additional marketing and packaging costs".[46]

Later the current system of a greater number of price categories was adopted. Microfiche reports have been sold at a standard price regardless of length. The current policy on prices for foreign orders is discussed in Appendix V.

Document reproduction costs are not the only costs associated with filling orders from the NTIS collection. Initial processing costs, for agencies not supplying cataloging data on computer tapes, has been supported in part by Congressional appropriations which have in the past accounted for about 16% of the total NTIS budget. These appropriations are being phased out.[47]

Starting in January 1973 "to achieve greater self-sufficiency, NTIS began charging some agencies a processing fee for each document submitted. In May 1973, OMB directed that this fee be applied to all agencies, to further reduce NTIS' dependence on funds appropriated".[48] The usual fee per document was $40.

This fee was seen as a deterrent to submitting reports to NTIS by many agencies, particularly because the fee was instituted so quickly that few agencies could include the added cost in their budgets for fiscal years 1973 and 1974.

Some allowance was made for this problem but NTIS refused to accept reports unaccompanied by the processing fee as of July 1, 1975. HEW and HUD were the major agencies whose coverage was substantially reduced as a result.[49]

A 1976 study advised that self-sufficiency was only a secondary objective of NTIS and that if the fee interfered with the collection and dissemination of scientific information the Secretary of Commerce could change the policy and seek additional appropriated funds, if necessary.[50] Apparently the processing fee is being phased out. The policy in January 1979 was to charge no fee if ten or more stock copies were submitted to NTIS. A $20 fee was charged if fewer than ten copies were supplied.[51]

NTIS estimates that the actual cost of processing a report is $40 or $50. Some reports pay for themselves in sales revenue. Many do not. It is estimated that about one-third of the reports received each year are never sold.[52] A report which sells more than 100 paper copies has done well.[53] This low demand for a multiplicity of titles has affected NTIS inventory control policies and document delivery time. These are discussed in Appendix VI.

Many factors have changed since the 1966 study which recommended a single price. Microfiche distribution is a much larger proportion of total sales, rising from 10% in 1966, to 31% in 1968, 64% in 1969 (when a charge for paper copies was introduced for DDC users), and to 74% in 1973.[54]

Paper and postage costs have increased enormously. A single unit price per paper copy title may be impractical. But is the present price code structure of 25-plus categories the most effective?

V. NTIS vs. GPO: or the politics of knowledge

The relationship of NTIS to the Government Printing Office (GPO) is less well-defined than one might expect of two organizations with apparently similar functions. The two do have overlapping responsibilities and have at times agreed to cooperate. They have seldom, if ever, seemed to coordinate activities.

This is most apparent when one attempts to determine the extent of overlapping coverage in the two collections. NTIS publications appear in the Monthly Catalog and NTIS availability may be noted there. Therefore NTIS publications are included to some extent in GPO depository library collections. Reports may be for sale simultaneously from both NTIS and GPO. But to the best of my knowledge there are no cross-references from Sudocs number to NTIS accession number or vice versa, and no statistical surveys of the overlap in coverage.

Theoretically there should be a large overlap between the Monthly Catalog and GRA & I. Documents printed by GPO for NTIS are automatically acquired by GPO. There is a GPO field printing plant at NTIS in Springfield, Virginia. Large print jobs, beyond its capacity, are sent to GPO's other facilities or to a contractor through GPO.[55] When GPO prints a report it can arrange for a print overrun in sufficient quantity to allow distribution to depository libraries.

Agencies are also required by Section 1902 of the U.S. Code, title 44, to "furnish the Superintendent of Documents

a list of such publications it issued during the previous month, that were obtained from sources other than the Government Printing Office".To meet this requirement agencies are to send two copies of these publications to GPO. This obligates NTIS to furnish copies of publications which they originate, and NTIS does so.[56]

A brief survey of the NTIS/GPO overlap appears in Appendix VII. The top ten NTIS 'best sellers' were searched in the Monthly Catalog. Listings were found for five of the titles. This would suggest that the overlap may be extensive but is not comprehensive.

Early emphasis on NTIS/GPO cooperation seems to have concentrated on expanding NTIS coverage. In 1961 OTS arranged for the Superintendent of Documents "to provide copy of suitable reports, not already received by OTS, for announcement".[57] NTIS would supply microfiche of these reports, but not paper copies. Older bibliographic records in the NTIS file may still include notice of GPO paper copy availability. These titles are often out of stock at GPO now and paper copies are available from NTIS.

NTIS and GPO may simultaneously sell a report now, though GPO prices are markedly lower. While GPO is also required to be self-sustaining[58], the difference is reportedly attributable to GPO's more limited stock and lack of an archival function.[59]

Whether NTIS is required to supply GPO with copies of its reports "has been a point of contention between GPO

and NTIS for some time".[60] A request from the Public Printer for a decision on the applicability of the Depository Library Act of 1962 to NTIS resulted in a lengthy ruling which still left the question somewhat open.

> We agree with NTIS that its publications may generally be regarded as 'cooperative publications'. We also agree that those NTIS publications of a specialized and limited interest nature are... exempt from the Depository Library Act. At the same time, we conclude that /legislative authority and history/ indicate a different treatment for NTIS publications that are 'issued primarily for the general benefit of the public'. Thus we agree with GPO that the latter are subject to the Library Act. It is recognized that it may be difficult to apply precisely the foregoing distinction; and this task must be left to resolution between NTIS and GPO.[61]

One of the publications in dispute was GRA & I, which about one-half (about 700) of the GPO depository libraries receive.[62] Although GPO prints GRA & I and pays for the depository library print overrun, NTIS claimed that this free distribution reduced potential NTIS sales and was a deterrent to becoming self-sustaining. In response to NTIS objections, the Head of the Library and Statutory Distribution Branch of GPO stated that he "plans to distribute to the depository libraries anything he can legally get his hands on".[63]

Relationships between NTIS and GPO are reportedly still less than wholly cordial, though somewhat improved. Different issues seem likely to emerge. As of July 1977 if NTIS does not supply paper copies sufficient for

distribution to depository libraries GPO will convert the report to microfiche and supply fiche copies. This acquires original acquisition of only one copy and cuts down the number of reports only announced in the Monthly Catalog.[64] Possibilities of cooperation in the future seem likely to focus on joint or shared microprocessing.[65]

GPO/NTIS overlapping coverage is an important issue to many users, especially librarians, because NTIS has no formal depository system of its own. In their view "SDM [predecessor of SRIM] is our answer to depositories".[66] Many users would disagree.

Sizeable collections of NTIS microfiche do exist. In 1973 NTIS estimated that about ten customers get everything available, on microfiche.[67] A list of substantial NTIS microfiche collections could be very helpful to librarians. No such list has been available from NTIS.[68] The 1978 Directory of Government Document Collections and Librarians does note libraries which report NTIS collections. No indication is given as to the precise size or scope of the collections. A list of these libraries appears in Appendix VIII.

Now that the NTIS and GPO bibliographic records are both available on-line, statistical comparisons of the collections may be less arduous to compile. Such a comparison would seem valuable. Does it make sense for NTIS and GPO to discuss cooperative ventures without knowing to what extent their services already overlap? Are there areas in which cooperation is both possible and beneficial?

VI. A Recommendation; or how well does it work?

I have posed many questions without specifying solutions. Such an exercise would be futile if I did not believe that NTIS, like its users, must know what to ask before they will begin to find productive answers. Some of my questions have been asked before. Some are probably being considered now.

It is very easy to be distracted by a plethora of studies, committees, and recommendations. My only recommendation is that NTIS keep the following questions in mind.

Are NTIS responsibilities clearly defined?
Is NTIS concentrating its efforts on what it does well?
Is it doing so in the most effective way possible?
Is it possible to anticipate future needs and demands?

There are no easy answers. There are certainly conflicting demands and unmet needs. NTIS is but a small part of a very large government. Many of its constraints are beyond its control.

But elaborate solutions have proved inadequate in the past. Perhaps it is best to start by asking some very basic questions.

Notes

[1]Jack Robins, "Government Reports Can Save You Money," Management Review 42 (November 1953): 635.

[2]Sylvia Porter, "Personal Data on Sale," News and Observer, Raleigh, N.C., January 26, 1979, p.27.

[3]Robins, p.635.

[4]Ibid.

[5]U.S. Department of Commerce, Annual Report of the Secretary of Commerce (Washington D.C.: Government Printing Office, 1946) p.18.

[6]U.S. Department of Commerce, Annual Report of the Secretary of Commerce (Washington D.C.: Government Printing Office, 1947) pp.21-32.

[7]John Weber, "Technical Reports Program of the Technical Division of OTS," American Documentation 9 (October 1958): 308.

[8]Bernard Fry, "The Clearinghouse for Federal Scientific and Technical Information," Information Systems Compatability, edited by Simon Newman (Washington D.C.: Sparta Books, 1965), pp.37-38.

[9]The President's Science Advisory Committee, Science, Government and Information (The White House, January 10, 1963) p. 47 as cited in Hubert Sauter, "Clearinghouse for Federal Scientific and Technical Information", Encyclopedia of Library and Information Science (New York: Marcel Dekker Inc.,1971) p. 191.

[10]Robert H. Rea, "Defense Documentation Center," Drexel Library Quarterly 10 (January-April 1974): 29.

[11]Martha W. West, "More on Reports," RQ 10 (Spring 1971): 286.

[12]"New Information Service Launched by Commerce Department," Library Journal 95 (November 1970): 3716.

[13]Ibid.

[14]U.S. Department of Commerce, Annual Report of the Secretary of Commerce (Washington D.C.: Government Printing Office, 1977) p.24.

[15]William Knox, "Special Libraries and NTIS," Special Libraries 67 (January 1976): 46.

[16]Comptroller General of the U.S., Observations on Collection and Dissemination of Scientific, Technical, and Engineering Information (Washington D.C., March 19 1976) Appendix I.

[17]J.C. Meredith, "NTIS Update: A Critical Review of Services," Government Publications Review 1 (1974): 344.

[18]U.S. Department of Commerce, Annual Report, 1947, p.18.

[19]"New Federal Sci-Tech Clearinghouse Takes Over OTS Document Distribution," Library Journal 90 (February 1, 1965): 598.

[20]"New Congressional Bill Calls for Merger of National Technical Information Service, Smithsonian Science Information Exchange, and Office of Science Information Service into a 'Science and Technology Information and Utilization Corporation'," Information News and Sources 7 (September 1975): 195-205.

[21]"Sci-Tech Corporation Scuttled," FIU Letter No. 3 (November 1975): 1.

[22]U.S. Congress, Joint Committee on Printing, Government Printing and Binding Regulations No. 24 (April 1977): 22.

[23]Lillian Hamrick, "The Art of Progress," Special Libraries 54 (January 1963): 20.

[24]"By an Agreement," Library of Congress Information Bulletin 23 (May 4, 1964): 207.

[25]Hamrick, p.22.

[26]National Technical Information Service, A Reference Guide to the NTIS Bibliographic Data File, 1978, p.4.

[27]William Knox, "NTIS Defended and Reply," Special Libraries 68 (April 1977): 6A.

[28]Comptroller General of the U.S., Observations on Collection, Appendix I.

[29]National Technical Information Service, NTIS information Services General Catalog No. 6, January 1979, p.11.

[30]National Technical Information Service, Source Client Manual, August 1975, Section 1.5.

[31]National Technical Information Service, Reference Guide, p.1.

[32]National Technical Information Service, NTIS Catalog, January 1979, p.5.

[33]Weber, p.311.

[34]Hamrick, p.24.

[35]Hubert E. Sauter, "Clearinghouse for Federal Scientific and Technical Information," Encyclopedia of Library and Information Science, (New York: Marcell Dekker Inc., 1971) p. 195.

[36]Committee on Information Hang-ups, Perspective on NTIS: the Intermediary's View, (Washington D.C., PB 275076, December 1977) p. 12.

[37]U.S. Department of Commerce, Annual Report, 1946, p.19.

[38]Committee on Information Hang-ups, Perspectives, p.42.

[39]Committee of DDC Users in the Greater Washington D.C. Area, Problems Encountered by Users of the Technical Information Services Offered by DDC and CFSTI, with recommendations for the Future, (Washington D.C., ED 044 156, September 1969) p. 5.

[40]Susan Wagner, "NTIS Chief Fields Tough Questions," Publishers Weekly 201 (June 5, 1972): 114.

[41]Telephone conversation with Fran Roberts of NTIS, January 24, 1979.

[42]U.S. Department of Commerce, Annual Report, 1946,p.21.

[43]D.W. King, R.R.V. Wiederkehr, S.E. Bjorge, P.F. Urbach, "Experimentation, Modeling and Analysis to Establish a New Pricing Policy at the Clearinghouse for Federal Scientific and Technical Information," Proceedings of the American Society for Information Science, Columbus,Ohio, October 20-24, 1968. (New York: Greenwood Publishing Company, 1968) p. 311.

[44]King, p. 314.

[45]Saul Herner and Matthew J. Vellucci, eds., Selected Federal Computer-based Information Systems, (Washington D.C.: Information Resources Press, 1972) pp.49-50.

[46]Ruth Smith, "User Group Technique in Action," Special Libraries 64 (January 1973): 41.

[47]Bo W. Thott, "The National Technical Information Service," Drexel Library Quarterly 10 (January-April 1974): 50.

[48]Comptroller General of the U.S., Observations on Collection, Appendix I.

[49]Philip Van de Voorde, "1975 GODORT Program," Documents to the People 3 (November 1975) : 40.

[50]Comptroller General of the U.S., Observations on Collection, Appendix I.

[51]Telephone conversation with Fran Roberts of NTIS, January 24, 1979.

[52]Meredith, p. 356.

[53]Thott, p. 51.

[54]Thott, p. 46.

[55]Thott, p. 45.

[56]Van de Voorde p. 37.

[57]Hamrick, p. 21.

[58]"GPO and NTIS Increase Prices," Information News and Sources Pt. 1 6 (April 1974): 105.

[59]National Technical Information Service, NTIS Catalog, January 1979, p. 3.

[60]Van de Voorde, p. 31.

[61]Van de Voorde, p. 41.

[62]Telephone conversation with Sue Krimm of NTIS, November 6, 1977.

[63]"NTIS Limited Copyright,"FIU Letter No. 7 (July 1976): 1.

[64]Telephone conversation with GPO Librarian, January 24, 1979.

[65]Telephone conversation with Bernadine Hoduski, Joint Committee on Printing, January 30, 1979.

[66]Eric Tietz, "Clearinghouse for Federal Scientific and Technical Information (CFSTI)," Proceedings of a Conference on Federal Information Resources: Identification, Availability and Use, (Washington D.C.: Committee on Scientific and Technical Information, Task Group on Library Programs and te Federal Library Committee, March 26-27, 1970) p. 70.

[67]Meredith, p. 356.

[68]Telephone conversation with Sue Krimm of NTIS, November 6, 1977.

APPENDIXES

APPENDIX I

Collection growth and sales 1946-1977

Fiscal year	Reports received	Reports ordered	Annual income
1946	27,000	241,520	$ 106,568
1947	86,489	224,850	294,029
1948	58,382	na	299,744
1949	10,415	na	207,375
1950	na	na	100,000
1951	3,187	na	$ 126,000
1952	na	na	na
1953	9,386	167,000	155,000
1954	12,578	189,753	316,967
1955	7,588	c.102,000	191,000
1956	8,000	192,109	$ 245,174
1957	11,619	240,240	344,510
1958	7,486	270,000	388,000
1959	10,099	427,000	485,000
1960	29,000	547,000	564,000
1961	27,000	634,000	$ 606,000
1962	35,000	670,000	811,000
1963	38,000	711,000	896,000
1964	40,000	734,000	978,000
1965	45,000	1,476,000	1,144,000
1966	49,000	1,900,000	$ 1,534,000
1967	52,000	2,025,000	1,611,000
1968	44,200	2,220,000	1,690,000
1969	51,000	2,298,000	2,724,000
1970	na	na	na
1971	71,180	2,632,639	$ 3,424,000
1972	74,818	2,283,400	4,221,000
1973	71,254	2,638,000	5,597,000
1974	78,390	2,356,000	8,251,000
1975	53,486	c.4,000,000	12,800,000
1976*	65,214	3,949,344	10,264,000
1977	80,000+	na	na

Source: Annual Report of the Secretary of Commerce, 1946-1977. Statistics for 1946-1974 compiled by Helen Kirchen in The National Technical Information Service: Its Development and its services, 1976, appendix III.

Note: Figures for reports received are not strictly comparable. The basis on which this statistic was reported varies.

*FY 1976 (ending June 30, 1976) statistics includes transition quarter (ending September 30, 1976).

na: not available in Annual Report

APPENDIX II

Thesauri used in the NTIS bibliographic data file, 1964-present

Official thesauri; current

Department of Defense reports; free language index terms also added. January 1974-present.

DDC Retrieval and Indexing Terminology (1974)

Department of Energy reports; June 1975-present.

DOE Subject Indexing and Retrieval Thesaurus (1976)

National Aeronautics and Space Administratipn reports; 1964-present, various editions.

NASA Thesaurus Volume I; Alphabetical Listing
Volume II; Access Vocabulary

National Institute of Education, ERIC reports; free language index terms also added.

Thesaurus of ERIC Descriptors (1977).

Other agencies, DOT, EPA, HUD, etc. reports; free language index terms also added. November 1970-present.

Thesaurus of Engineering and Scientific Terms (1969)

Official thesauri, no longer in use

Department of Defense reports; 1964-December 1973.

Thesaurus of DDC Descriptors (1966, out of print)

Department of Energy reports.

INIS; Thesaurus (1974)
October 1973-June 1975

Subject Headings used by the USAEC Division of Technical Information (various editions)
1964-September 1973

Other agencies now indexed by Thesaurus of Engineering and Scientific Terms(1969). 1964-October 1970.

Thesaurus of DDC Descriptors (1966, out of print)

Current subject thesauri, used to aid in selection of free language index terms

Business: National Technical Information Service List of Business and Economic Terms (1973)
December 1973-present

Criminal justice: National Criminal Justice Thesaurus (1975)
January 1976-present

Energy: Energy Microthesaurus--A Hierarchical Listing of Energy Indexing Terms Used in the NTIS Data Base (1976)
August 1975-present (as updated)

Engineering: Microthesaurus of Soil Mechanics Terms (1974)
1974-present

Medical: Medical Subject Headings--Annotated Alphabetic Listing (1977)
1974-present (as updated)

Pollution: Environmental Microthesaurus--A Hierarchical List of Indexing Terms Used by NTIS
July 1977-present

Transportation: NHTSA/SASI Cooperative Thesaurus of Highway and Motor Vehicle Safety Literature Terms (1973)
1973-present

Water resources: Water Resources Thesaurus (1971)
1974-present (as updated)

Other: Microthesaurus of Vehicle Mobility, Environment, and Pavement Terms (1975)
1975-present

Source: A Reference Guide to the NTIS Bibliographic Data File, 1978, pp.14-16.

APPENDIX III

NTIS Accession Numbers

The multiplicity of NTIS accession numbers, in conjunction with other numbers (agency's report number, contractor's report number, contract numbers, grant numbers, etc.) often produces a confusing citation. Identification of the accession number is often difficult. Many accession number prefixes are assigned only to reports from a specific agency. Common prefixes are:

PB — Reports indexed, cataloged, and abstracted by NTIS for other agencies. From Publication Board, the early predecessor agency of NTIS.[1]

AD — Department of Defense reports. From ASTIA Document, Armed Services Technical Information Agency, predecessor of the Defense Documentation Center.[2]

ED — ERIC reports, 1972-present.

HRP — Bureau of Health Planning and Resources Development reports, 1976-present.

JPRS — Translations from the Joint Publications Research Services, largely from Russian and Eastern European languages.

N — NASA reports.

NTIS — Reports prepared by NTIS, November 1972-present.

NTISUB — Subscription items available from NTIS, 1976-present.

PAT, PAT-APPL — U.S. government owned patents or patent applications. (DOD and NASA patents use AD and N numbers.)

TT — Translations prepared by the Special Foreign Currency Science Information Program, 1964-present. Also used 1964-1968 for translations indexed and cataloged by CFSTI.

The Department of Energy (and predecessor agencies AEC and ERDA) does not use a standard agency prefix. Many DOE prefixes identify the performing organization. Sample accession number prefixes for DOE reports are:

ANL Argonne National Lab
BNL Brookhaven National Lab
BNWL Battelle Pacific Northwest Labs
CONF Conference
ERDA Energy Research and Development Administration

FIND Fiche Index for Nuclear Dockets
LA Los Alamos Scientific Lab
LBL Lawrence Berkeley Lab
ORNL Oak Ridge National Lab
SAND Sandia Laboratories
TID Technical Information Center, DOE
USGS US Geological Survey

Letter prefixes and digits preceding the slash in an NTIS accession number constitute the basic accession number. A number following the slash is a check digit, instituted the year after NTIS shipped 40,000 wrong reports.[3] Letters following the slash are media codes, used by NTIS to monitor the effectiveness of its various announcement services, such as GRA & I or WGA.

Source: A Reference Guide to the NTIS Bibliographic Data File, 1978, pp.5,14.

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[1]Nancy Boylan, "Identifying Technical Reports through US Government Research Reports and its Published Indexes," College and Research Libraries 28 (May 1967): 176.

[2]J.C. Meredith, "NTIS Update: A Critical Review of Services," Government Publications Review 1 (1974): 346.

[3]Ruth Smith, "Government Information--Problems and Options," Special Libraries 64 (November 1973): 517.

APPENDIX IV

Indexes and current awareness services

Indexes to the NTIS collection and current awareness services have both sustained a number of changes in titles, format, content, coverage, and frequency of issue and cumulation.

The basic index, now Government Reports Announcements and Index, began in January 1946 as the Bibliography of Scientific and Industrial Reports. It was indexed by subject only. This was succeeded in July 1949 by the Bibliography of Technical Reports, which added a report number index in 1953.

The title was changed to U.S. Government Research Reports in October 1954. In 1961 USGRR added a separate section, Technical Abstract Bulletin (TAB), with abstracts of DOD reports.

The title was changed again in 1965 to U.S. Government Research and Development Reports. The two volumes, USGRDR and TAB were merged in July 1966. Issues were indexed by subject, corporate author, personal author, and contract number. An annual cumulative index was first issued in 1968.

Title and format changed again in 1971 to U.S. Government Report Announcement, with a companion volume, U.S. Government Reports Index. In April 1975 the abstracts and indexes were combined and the title changed to the current Government Reports Announcements and Index.[1]

Starting in the early 1950's, Technical Reports Newsletter, with brief summaries of a few reports, was issued and included at times in the Bibliography of Technical Reports.[1] Later the Fast Announcement Service (FAS) (briefly superseded by Highlights Digest) announced approximately 10% of the collection at irregular intervals. Subscribers were largely from business and industry and could choose among 57 subject categories. Normally the same reports were also announced in Research Highlights, a front section of USGRDR.

A 1968 study found FAS to be by far the most effective announcement medium. As a result the number of PB reports included in FAS was increased and Research Highlights was discontinued. A new product, Clearinghouse Announcements in Science and Technology (CAST) was developed.[2]

CAST, later renamed Government Reports Topical Announcements, was essentially separate sections of GRA and was issued simultaneously (semi-monthly) in 36 categories.

Weekly Government Abstracts (WGA) replaced GRTA in the early 1970's and was said by NTIS to be " in the opinion of the buying public,...a vast improvement over our former bi-weeklies".[3] Citations and abstracts are based on the information which appears in GRA & I, but subject categories do not correspond to the COSATI categories of GRA & I. Expedited processing and printing allow publication prior to announcement of the reports in GRA & I,[4] (Announcement was so expedited at one point that titles were announced weeks before the report was available.[5]) The title WGA

has recently been dropped and these are referred to simply as abstract newsletters, currently being published in 33 subject areas.

Standing orders for microfiche copies of reports was begun in 1969 as 'Selective Dissemination of Microfiche' (SDM), later called 'Selected Categories in Microfiche' (SCIM) and now referred to as 'Selected Research in Microfiche' (SRIM). Users could originally select from the subject categories used by GRA or FAS, or a combination of these.[6] Starting in 1973 descriptors could be added to produce an individual user profile.[7] Average distribution through SRIM per title is thirty microfiche.[8]

The NTIS on-line bibliographic file can be used for Selective Dissemination of Information (SDI) searches. On-line access to the file became publicly available by 1973 through Lockheed's Dialog System.[9] SDC and BRS also make the NTIS file available now.

Searches are available through NTIS as well, either custom designed or in the form of Published Searches on specific subjects. Users with access to terminals and the appropriate commercial systems may not find access through NTIS to be as convenient as an in-house system. Such access is increasingly common.

NTIS offered custom searches prior to automation. Index cards were searched manually and citations and abstracts supplied on printed cards.[10] This system can still be used for reports which are not in the automated file.[11]

[1]Helen Smit Kirchen, "The National Technical Information Service: its development and its services," (Paper for the M.S. in L.S., University of North Carolina, Chapel Hill, N.C.,April 1976), Appendix Two.

[2]S.E. Bjorge, P.F. Urbach, P.M. Earl, D.W. King, R.R.V. Wiederkehr, "An Experiment to Determine the Effectiveness of Various Announcement Media on CFSTI Sales," Proceedings of the American Society for Information Science, Columbus, Ohio, October 20-24, 1968, (New York: Greenwood Publishing Company, 1968): 327, 329.

[3]Ruth Smith, "Government Information--Problems and Options," Special Libraries 64 (November 1973): 517.

[4]Bo W. Thott,"The National Technical Information Service," Drexel Library Quarterly 10 (January-April 1974): 43.

[5]Ruth Smith, "User Group Technique in Action," Special Libraries 64 (January 1973): 38.

[6]Saul Herner and Matthew J. Vellucci, ed., Selected Federal Computer-based Information Systems, (Washington D.C: Information Resources Press, 1972) p. 50.

[7]Thott, p.46.

[8]National Technical Information Service, Source Client Manual, August 1975, Section 1.4.

[9]"Lockheed to Distribute Gov't Technical Reports," Library Journal 98 (March 1, 1973): 681.

[10]J.C. Meredith, "NTIS Update: A Critical Review of Services," Government Publication Review 1 (1974): 49.

[11]Visit to NTIS, March 10, 1978.

APPENDIX V

Foreign order prices

NTIS policy on prices of reports for foreign orders is of little relevance to most users in this country, consequently it is little-known. The policy is relatively simple. With the exception of countries in which NTIS has established local agents (United Kingdom, France, Japan and the Netherlands) or agents through an AID program (Brazil, Mexico, Bolivia, Colombia, Costa Rica, Dominican Republic, Guatemala, Honduras, El Salvador, Nicaragua, Indonesia, Pakistan, Peru, Phillipines, Sri Lanka, Thailand, Brazil, Chile, Ecuador, India, Korea, Nigeria and Venezuela) where customers pay in local currencies, the same price code/page number system applies. The only difference is that orders going to foreign addresses are charged double the price of orders going to North American addresses.

A variety of reasons seem to account for this policy. The NTIS 'Statement on the foreign availability and pricing of NTIS products and services' takes the position that

> foreign users should pay somewhat more for its products...to ensure the accessibility, scope and quality of the information services they receive... recovery from such sales will ultimately benefit U.S. customers by stabilizing NTIS' domestic prices ...and by providing the money for NTIS to develop new information sources, especially foreign sources not heretofore contributing significant technical information for U.S. use...Sales of material in the U.S. bound for foreign destinations are charged at the foreign prices...on the grounds that the application of foreign prices should be equitable.[1]

NTIS has also been concerned about foreign 'pirating' of their reports. In 1977 sales in Japan of pirate reproductions were estimated to have an annual value of three million dollars.[2]

But the policy is not necessarily just another effort to increase revenue. Sales of NTIS reports were reported to be interfering in some cases with ongoing foreign exchange agreements. "In spite of its great desire to expand the customer community, NTIS has promised to maintain curbs on foreign sales, such as higher prices for documents".[3]

Whatever the rationale, are these high foreign prices justified? GPO by comparison charges an additional 25% of a report's price to cover sea mail postage or 50% if sent air mail. Are there other reasons for the policy besides those stated? Are these still valid?

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[1]National Technical Information Service, "Statement on the Foreign Availability and Pricing of NTIS Products and Services," (November 30, 1977).

[2]"Copyright Revision Enacted," Special Libraries 67 (December 1976): 593.

[3]"NTIS Source Clients," FIU Letter No. 3, November 1975: 2.

APPENDIX VI

NTIS product formats and delivery time

NTIS reports are generally available in paper copy and microfiche. Other formats, such as magnetic tape for data files and computer programs may be used for specialized products.

NTIS keeps a microfiche master copy of every document added to the collection since July 1964. Paper copies may be supplied from stock copies either supplied by the originating agency or reprinted by NTIS, or by 'blowback' from the silver halide master fiche or a diazo duplicating fiche. Originating agencies are requested but not required to supply multiple copies.[1]

The large number of titles in the NTIS collection and low volume of requests for most reports preclude keeping stock copies of many items. If sufficient demand is anticipated NTIS will arrange for reprinting from the original paper copy. Titles not kept in stock are printed by blowback from the fiche, resulting in photocopy like reproductions. Illustrations and detailed charts will not have the quality of those in the original report.

Printing arranged by NTIS may be done by a GPO plant on-site in Springfield, Virginia, up to 225 copies, or by GPO in Washington DC or under a GPO contract. Prices and delivery time vary according to the printing location employed. Agencies may purchase additional copies for their own use at a 50% discount at the time of printing.[2]

Delivery time on orders may be affected by the reproduction method used. If stock copies are on hand or the report is reproduced by blowback there should be no delay. Reprinting of reports may result in delays ranging from minimal to lengthy.

Rush orders are filled from stock at hand or by blowback. This service is well used.[3] Rush handling adds $10 to the cost of each title or copy and guarantees that the order will be filled within 24 hours of receipt. Orders will be sent by priority mail.

Premium handling orders are mailed within four to nine days and receive priority processing. The additional charge is $3.50 but this does not guarantee filling of the order in the specified time. Both rush and premium service are available only to deposit account customers and American Express cardholders.

Regular orders are said to be filled in nine to thirty days. They are sent by parcel post unless $3 is added for priority mail delivery. All orders can be picked up in Springfield, Virginia or Washington D.C., though there may be an additional charge for this.[4]

Though the technical details have varied considerably, the combinations of paper copy/microform and stock copy/ demand printing have been in use by NTIS for a long time. Publication Board orders were originally filled either by photostats or microfilm. Although more than half of the orders were for titles constituting 1% of the 27,00 reports in the

collection in 1946, there were no funds for reprinting in advance because all revenue from sales went to the US Treasury. The photostats were expensive, quality was uneven, and inadequate equipment and staffing resulted in delays of eight weeks or more in filling orders.[5] in 1947 a trust fund was authorized which permitted advance duplication of copies.[6]

OTS later worked out agreements with several military research and development agencies to receive multiple copies of reports on a cost basis to OTS, through print overruns at the time agency distribution copies were printed. Single copies of reports submitted to OTS, about 25% of the collection, were reviewed by an OTS Trust Fund Committee to determine if 100 or more copies were likely to be sold. Reports expected to be in sufficient demand were printed by photo-offset.[7]

Reports added to the collection before July 1964 are still available on microfilm or odd-sized microfiche. Most reports added before 1961 must be obtained through the Library of Congress.[8] Reports with earlier dates may appear in the bibliographic data file and be available in standard formats if they were added to the collection after 1964.

[1]Telephone conversation with Fran Roberts of NTIS, January 24, 1979.

[2]National Technical Information Service, Source Client Manual, August 1975, Section 2,3.

[3]Telephone conversation with Fran Roberts of NTIS, January 24, 1979.

[4]National Technical Information Service, NTIS Information Services General Catalog No. 6, January 1979, p.82.

[5]U.S. Department of Commerce, Annual Report of the Secretary of Commerce (Washington D.C.: Government Printing Office, 1946) pp. 19-20.

[6]U.S. Department of Commerce, Annual Report of the Secretary of Commerce (Washington D.C.: Government Printing Office, 1947) p.xxxiii .

[7]John Weber, "Technical Reports Program of the Technical Division of OTS," American Documentation 9 (October 1958): 309.

[8]Bo W. Thott, "The National Technical Information Service," Drexel Library Quarterly 10 (January-April 1974): 46.

APPENDIX VII

NTIS and GPO collection overlap sample

NTIS current best sellers[1]	NTIS No./Price	Sudocs No./Price[2]
1. An inexpensive economical solar heating system for homes[3]	N76-27671 $5.25	NAS 1.15:x-3294 $1.15
2. Analysis of financing problems in coal and oil shale boom towns	PB259438 $9.50	FE1.2-F49
3. Permuted medical subject headings 1977	PB259021 $11.75	HE20.3612:18/1pt.2 $8.20
4. Fire safety aboard LNG vessels	ADA030619 $11	
5. NASA earth resources survey symposium Vol. 1-B Geology, information systems, and services	N76-17501 $7.50	
6. Viking 1: Early results	N76-28296 $2	NAS1.21:408 $1.60
7. Solar energy heat pump systems for heating and cooling buildings, University Park, Pa., June 12-14, 1975	C00-25601 $9.50	
8. Criteria for evaluation of the health aspects of using flavoring substances as food ingredients	PB257184 $6.50	
9. Solar heating of buildings and domestic hot water	ADA054601 $6.00	
10. Medical subject headings, annotated alphabetic list 1977	PB270894 $19	HE20.3602:434/978

[1]National Technical Information Service, NTIS Information Services General Catalog No. 6, January 1979, p.70.

[2]Price is as of November 1978, from the GPO microfiche stock listing.

[3]This title has sold about 40,000 copies. No figures are given on sales volume of the other titles.

APPENDIX VIII

Libraries with NTIS collections

Alaska

Alaska State Library, Juneau
University of Alaska, Elmer G. Rasmussen Library, Fairbanks

Arkansas

University of Arkansas for Medical Sciences, Library for the Medical and Health Related Sciences, Little Rock

California

Alameda County Library, Fremont Library, Fremont
California State Division of Mines and Geology Library, San Francisco
California State Library, Sacramento
Stanford University, J. Hugh Jackson Library, Graduate School of Business, Stanford
University of California, Los Angeles;
Education and Psychology Library
Engineering and Mathematical Sciences Library
University of California, San Diego; Scripps Institution of Oceanography Library, La Jolla
University of California, Santa Barbara; Library

Colorado

Adams State College, Learning Resources Center, Alamosa
University of Colorado at Boulder, Norlin Library, Boulder
University of Colorado at Denver, Auraria Library, Denver
US EPA, Region VIII Library, Denver
US Department of Commerce, NOAA-ERL Library, Boulder
US Department of the Air Force, Air Force Academy Library

Connecticut

Mystic Seaport Inc., GW Blunt White Library, Mystic

Delaware

Delaware Technical and Community College Library, Georgetown

District of Columbia

American Trucking Association Inc. General Library
US Community Services Administration Library

US Department of Commerce
Bureau of the Census Library
National Bureau of Standards Library
Office of Telecommunications Library
US Department of Energy, Energy Library
US Department of Housing and Urban Development Library
US Department of the Interior, Natural Resources Library
US Library of Congress
US Postal Service Library

Florida

Florida A&M University, Coleman Memorial Library, Tallahassee
Florida International University, Athenaeum, Miami

Georgia

Atlanta University, Trevor Arnett Library, Atlanta
Georgia Institute of Technology Library, Atlanta
US Center for Disease Control, CDC Library, Atlanta

Hawaii

Honolulu Municipal Reference and Records Centre, Municipal Reference Library, Honolulu

Idaho

EG&G Inc., INEL Technical Library, Idaho Falls

Illinois

University of Illinois at Chicago Circle Library, Chicago

Indiana

Ball State University, Bracken Library, Muncie

Kentucky

University of Kentucky, Margaret I. King Library, Lexington
University of Louisville, Belknap Campus Library, Louisville

Louisiana

New Orleans Public Library, Business and Science Division, New Orleans

Maryland

US Department of Commerce, NOAA Library and Information Services Division, Rockville

US Department of Health, Education and Welfare, National Library of Medicine, Bethesda

Massachusetts

Lynn Public Library, Lynn
Worcester Polytechnic Institute, George C. Gordon Library, Worcester

Michigan

Calvin College and Seminary Library, Grand Rapids
Michigan State University Library, East Lansing

Minnesota

University of Minnesota, St. Paul; St. Paul Campus Library
Metropolitan Council Library, St. Paul

Mississippi

Mississippi Research and Development Center, Information Services Division, Jackson
US Department of the Army, Army Engineer Waterway Experiment Station Library, Vicksburg

Missouri

Central Missouri State University, Ward Edwards Library, Warrensburg
Missouri Geological Survey and Water Resources Library, Rolla

Montana

Montana State University Library, Bozeman

New Hampshire

University of New Hampshire, Diamond Library, Durham

New Jersey

College of Medicine and Dentistry of New Jersey, George F. Smith Library of the Health Sciences, Newark
Rutgers-the State University, Alexander Library, New Brunswick
Seton Hall University, McLaughlin Library, South Orange

New Mexico

University of New Mexico, Bureau of Business and Economics Research Data Bank, Albuquerque

New York

C.W. Post Center, Long Island University, B. Davis Schwartz Library, Greenvale
Columbia University Libraries, New York
Cornell University Libraries, Ithaca
Nassau County Department of Health Central Research Library, Mineola
New York State Department of Motor Vehicles Research Library, Albany
New York State Library, Albany
Plattsburgh State University College, Benjamin F. Feinberg Library, Plattsburgh
State University College, Utica/Rome, Utica
State University of New York at Albany, University Library, Albany

North Carolina

North Carolina State University, D.H. Hill Library, Raleigh
Wake Forest University, Z. Smith Reynolds Library, Winston-Salem

Ohio

Cleveland Public Library, Cleveland
Ohio Northern University, Jay P. Taggart Law Library, Ada
Rio Grande College, Jeannette Albiez Davis Library, Rio Grande
University of Toledo, Carlson Library, Toledo
US EPA Technical Library, Cincinnati
Youngstown State University Management Library, Youngstown

Oregon

Oregon State University Library, Corvallis
University of Oregon Library, Eugene

Pennsylvania

Federal Reserve Bank of Philadelphia
Drexel University Libraries, Philadelphia
York College of Pennsylvania Library, York

Rhode Island

University of Rhode Island Library, Kingston

South Carolina

US EPA, Gulf Breeze Environmental Research Laboratory, Bears Bluff Field Station, Johns Island

Tennessee

Memphis and Shelby County Public Library and Information Center, Memphis
Tennessee Department of Transportation Library, Nashville
US Tennessee Valley Authority, TVA Technical Library, Knoxville

Texas

Rice University, Fondren Library, Houston
Rosenberg Library, Galveston
Texas A&M University Library, College Station
Trinity University, Chapman Graduate Library, San Antonio
University of Texas at Arlington Library, Arlington

Utah

Brigham Young University, Harold B. Lee Library, Provo
Salt Lake County Library Systems, Salt Lake City
Utah State University, Merrill Library, Logan
US Department of the Interior, Bureau of Mines, Salt Lake City Metallurgy Research Center, Salt Lake City

Virginia

Virginia Beach Public Library, Municipal Reference Library, Virginia City
Virginia Military Institute,Preston Library, Lexington
University of Virginia, Alderman Library, Charlottesville
US Department of the Interior, Geological Survey Library, Reston

Washington

Spokane Public Library, Spokane
University of Washington, Suzzallo Library, Seattle
Washington State Library, Olympia
Washington State University Library, Pullman

West Virginia

US Department of Energy, Morgantown Energy Research Center, Morgantown

Wisconsin

New Berlin Public Library, New Berlin
University of Wisconsin-Madison, Kurt F. Wenant Engineering Library, Technical Reports Center, Madison
University of Wisconsin-Milwaukee Library, Milwaukee
University of Wisconsin-Stout, Robert L. Pierce Library, Menomonie

Source: Directory of Government Document Collections and Librarians, Nancy Cline and Jaia Heymann, eds., Government Documents Round Table, American Library Association (Washington D.C.: Congressional Information Service) 1978.

Libraries noted in the Directory as not being open to the public or not offering inter-library loans have been excluded from this list. However the Directory or individual libraries should be consulted for information on fees, restrictions and subject specialities.

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